

What is claimed is:

1. A copper based sintered contact material wherein non-metallic particles, comprised of one or more substances selected from the group consisting of pulverized oxides, carbides, nitrides and carbonitrides, are dispersed in an amount ranging from 0.2% by volume or more to less than 4% by volume.

2. The copper based sintered contact material according to claim 1, wherein said non-metallic particles are thermal-shock-resistant, oxide-based ceramics comprising SiO_2 and/or one or two or more elements selected from the group consisting of Si, Al, Li, Ti, Mg and Zr.

3. The copper based sintered contact material according to claim 1, wherein said non-metallic particles comprise one or more substances selected from the group consisting of the carbides, nitrides and carbonitrides of W, Ti, Mo and V and/or cermet particles produced by sintering said substances with Co and/or Ni.

4. The copper based sintered contact material according to claim 1 or 2, wherein said non-metallic particles are in the form of granules and/or fibers having an average particle diameter of 70 μm or less.

5. A copper based sintered contact material, wherein one or more intermetallic compounds, each of which comprises two or more elements selected from the group consisting of Ni, Si, Ti, Co, Al, V and P, are dispersed, and wherein the amount of said one or more intermetallic compounds is adjusted such that the total amount of said two or more elements is 0.5 to 10 wt%.

6. A copper based sintered contact material, wherein one or more intermetallic compounds, each of which comprises two or more elements selected from the group consisting of Cu, Sn, Ca, Mn, Cr, Mo, W, Sb and Te, are dispersed, and wherein the amount of said one or more intermetallic compounds is 0.1 to 10% by volume.

7. A copper based sintered contact material, wherein one or more intermetallic compounds, each of which comprises two or more elements selected from the group consisting of Ni, Si, Ti, Co, Al, V and P, are dispersed, wherein one or more intermetallic compounds, each of which comprises two or more elements selected from the group consisting of Cu, Sn, Ca, Mn, Cr, Mo, W, Sb and Te, are further dispersed, and wherein the total amount of the intermetallic compounds is 0.1 to 10% by volume.

8. The copper based sintered contact material according to any one of claims 5 to 7, further containing non-metallic particles, comprised of one or more substances selected from the group consisting of oxides, carbides, nitrides and carbonitrides, in an amount ranging from 1% by volume or more to less than 4% by volume.

9. The copper based sintered contact material according to any one of claims 1 to 8, wherein metal and/or alloy particles comprised of Mo, W, Cr, Co, Fe and Fe-C are dispersed in an amount of 0.5 to 5.0 wt%.

10. The copper based sintered contact material according to any one of claims 1 to 9, containing 1 wt% or less MnS and/or 1 wt% or less graphite.

11. The copper based sintered contact material according to claim 10, wherein the average particle diameter of said MnS and/or graphite ranges from 20 to 200 μ m or less.

12. The copper based sintered contact material according to any one of claims 1 to 11, containing at least 1 to 16 wt% Sn and 0 to 25 wt% Pb.

13. The copper based sintered contact material according to any one of claims 1 to 11, further containing 12 to 16 wt% Sn and a Cu-Sn compound phase which is dispersedly precipitated in the structure thereof.

14. The copper based sintered contact material according to claim 12 or 13, further containing one or more alloy elements selected from the group consisting of Zn, Mn, Be, Mg, Ag, and Bi, and a solid lubricant such as MoS₂, CaF₂ and WS₂.

15. A double-layered sintered contact member produced by sinter bonding the copper based sintered contact material of any one of claims 1 to 14 to an iron based material.

16. The double-layered sintered contact member according to claim 15,

which is produced by sinter bonding a pressed compact, formed from a sintered contact material containing Sn and/or Pb, to an iron based material, and

wherein the sintered compact sinter bonded to the iron based material contains 0.1 to 2 wt% one or more elements selected from the group consisting of Cr, Si, Al, P and Ti which have more significant affinity with respect to iron than with respect to copper

and stabilize the α phase of iron more than the γ phase of iron.

17. The double-layered sintered contact member according to claim 15, containing Si, Al, Ti and Cr which expand a sintered layer and/or one kind of non-metallic particles which restrains a shrinkage of a sintered layer, for fear that when using the double-layered sintered contact member which has been produced through a process in which a mixed powder having a sintered contact material composition and containing Sn and/or Pb is dispersed onto a steel plate, subjected to first sinter bonding at 810°C or more, and then subjected to second sintering by mechanically increasing the density of the sintered dispersed powder layer, the layer of the mixed powder dispersed in the first sintering might peel off the steel plate owing to sinter shrinkage.

18. The double-layered sintered contact member according to claim 17, wherein Sn is added by utilizing a Cu-Sn based alloy powder containing Sn in an amount no less than Cu - 30wt%Sn and/or Sn primary powder, so that the sintered layer in the first sintering is expanded.